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NATIONAL TUBERCULOSIS INSTITUTE

GOVERNMENT OF INDIA

BANGALORE – 560 003

Inaugurated on 16th September 1960
by
Pandit Jawaharlal Nehru

Genesis; Objectives, Functions and Structure; A Series of Breakthrough; Major Problems and Future Strategy; Perspectives.

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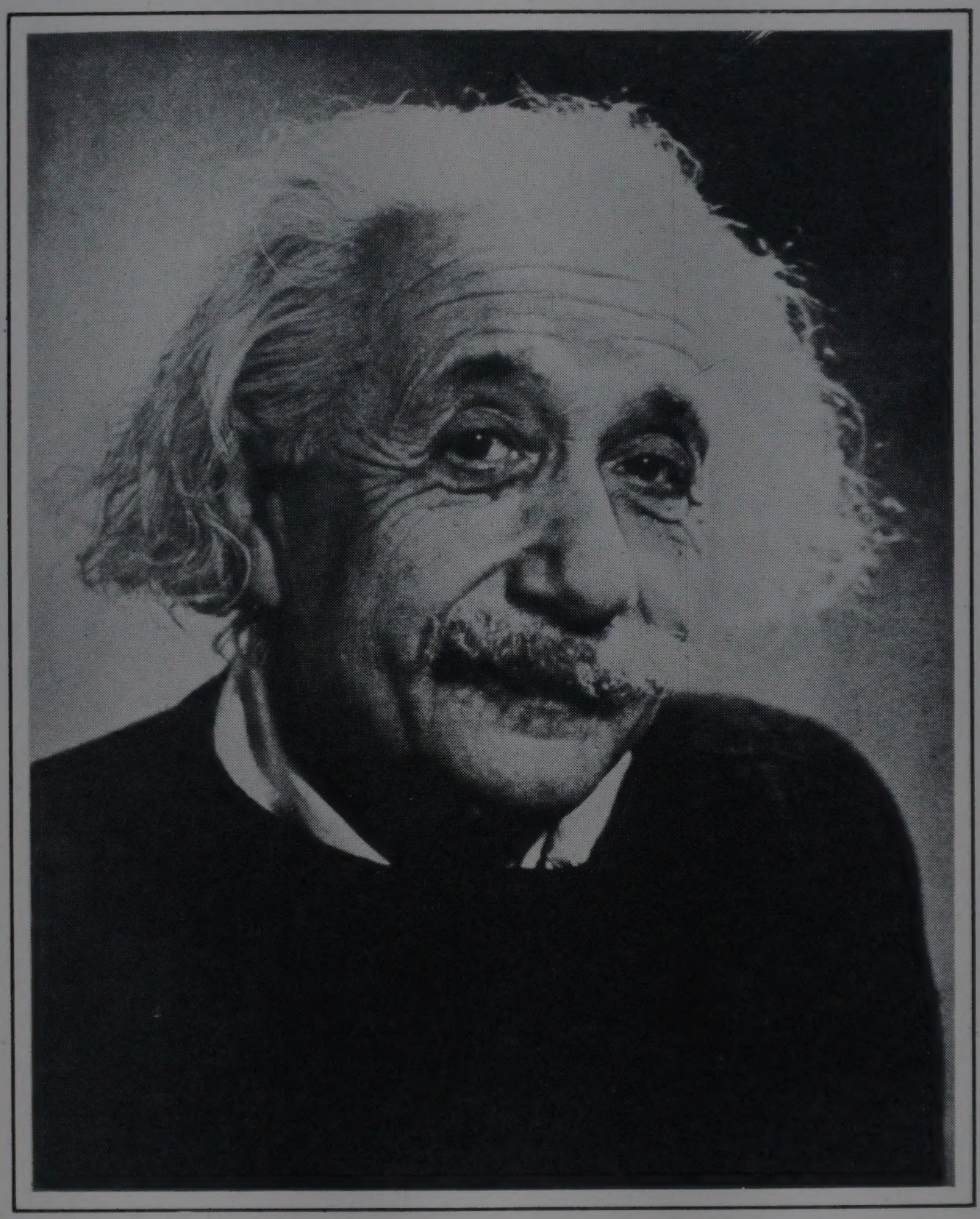
GUIDING THOUGHT
FOR
NATIONAL TUBERCULOSIS INSTITUTE
BANGALORE



"Concern for man and his fate must always form the chief interest of all technical endeavours. Never forget this in the midst of your diagrams and equations"

EINSTEIN

Pandit Jawaharlal Nehru First Prime Minister of India
Inaugurated the Institute on 16th September 1960.

Inaugural address by Pandit Jawaharlal Nehru

INAUGURAL ADDRESS BY THE LATE PANDIT JAWAHARLAL NEHRU, THE THEN PRIME MINISTER OF INDIA AT THE NATIONAL TUBERCULOSIS INSTITUTE, BANGALORE ON 16-9-1960

Mr. Chairman, Your Highness, Chief Minister and Friends,

I think it was Dr. Benjamin just speaking, who mentioned a case of a doctor who sent him a letter offering a patient for this institute. Well, more or less I was in the same state of blissful ignorance as to what this institute was. In fact coming here even this morning I tried to enlighten myself by enquiring about it.

When I promised to come here I promised to do so because well, I am interested in this fight against tuberculosis. At the same time there was nothing exciting about it. But when I heard the real purpose of this institute, then it struck me that this was as has been said, something unique and something far more important, if I may say so, than some institute or a hospital for treating patients. And now that you have established it, it seems the obvious thing to have done, to approach this question this way rather than picking up cases here and there and trying to treat them.

One of the speakers-was it — Dr. Mani, I think said that it is impossible to treat millions of cases, hospitalise them, that way, obviously so. So you have to adopt some different techniques, some different strategy of approach. Now when you deal with vast numbers of people that strategy must take into consideration two factors. One is, first thing of course is, to have a strategy. The second, trained people understanding that strategy who will carry the message to others. The third is, and it is very important, the mass of the people co-operating with that — large numbers, not, apart from your trained people, I mean, large numbers of the people in the country co-operating with that in some measure. If they are in a sense, if you like, just opposed to it, then all the trained people in the world would not do much good. If, as is more likely, they are just inert, not opposed to it, but not enthusiastic about it, then progress will no doubt be made, but slowly. Therefore the question comes of roping them in, if I may say so, making them understand that it is something worth while and for their good. To use a phrase which I do not quite like, it is the public relations approach. I do not think of it in the normal public relations way. But nevertheless it is a very important approach that if you go and sit in a village, that the village elders and Panches and the Panchayats should understand what you are doing and co-operate with you and explain it to the other village folk. That applies to any major undertaking, to get — when you tackle big social problems — you must get, well, to some extent the approval and the co-operation of large masses of people. Otherwise you are simply functioning in narrow spheres.

Now, in someone's speech, mention was made, I think it was Dr. Benjamin's, about the Community Development schemes. That is to say

there was some hint about getting co-operation from the Community Development movement. I was glad to hear mention that because this Community Development movement, as you perhaps know, is a very wide spread movement covering today—I forget the exact number—but certainly over 300,000 villages in India, out of about 550,000 about 60 percent of the villages and the population is covered today. I do not mean to say that is covered in as good a way as it should be. They vary; some do it well, others are not done well, and others are right at the beginning. But there is at any rate an organisation spread out to get over large parts of the country and which will, no doubt, cover every village in the course of the next few years. Now, if you get the support of that organisation not at the top, I mean, but rather on the village level, immediately you get something which you cannot duplicate. You cannot obviously have any kind of thing working all over India and every village. And further something that is happening in India today, again, which is of high importance is the shift, an attempt to shift authority, administrative authority, to some extent even other forms of authority, to the village councils, the Panchayats and the like and they are likely to become pivots of all kinds of activities, in the village. Now if you can get hold of the Panchayats again you have got something very important, for through them you can approach the public generally. This applies to rural areas chiefly. So I would submit for your consideration that apart from the specially technical work which you do, for which you have been trained and for which this institute will train people, that this approach of getting people to co-operate with you in masses through these existing organisations or those that are coming in to being that is the Community Development movement and the Panchayat movement both of which will touch every village in India becomes highly important. You have got fine drugs, and all that, and yet as someone said this morning, ultimately, probably, it is a question of good feeding and sanitation which will go a very long way, which is perfectly right. In fact for all your entire health programme, good feeding and sanitation will be the foremost foundation. Then, again, I am very glad to notice that not only the World Health Organisation but UNICEF is taking an intimate part in helping this. Because I do feel that whatever we can do, we should do, in various sectors of our population. But I think more and more attention should be paid to the child, and if you pay that attention after all you are paying attention to tomorrow's grown up. While if you do not pay attention to the child today well, you have the problem being repeated every time as he grows up, he grows up may be in an unhealthy state, bad habits bad this and that. So I am glad UNICEF is there to remind this organisation of the importance of the child. We all, in a sense of course, realise that. Well, every family, every mother, every father, realises it. But in the large sense, National sense, I do not think we realise it adequately yet. But realisation is coming gradually. There is a little more reference to it I think, in the draft Third Five Year Plan than there was previously, because I do attach great great importance to this because if you teach the child good habits and try to create an environment, good food and all that, then you have struck a fatal blow at disease. Then again, I am not sure what

they are doing in the State of Mysore about children in schools. But in the neighbouring State of Madras, they have got a wonderful scheme called—a school improvement scheme or—(mid-day meal)—mid-day meal, has extended into school improvements—much bigger now. It really is an amazingly fine scheme which started giving mid-day meals to children, now they give all kinds of things, other things too—and largely through public co-operation, the whole basis of the scheme is public co-operation. Governmental help of course. You cannot do these things in a big way without large scale public co-operation. That fact has to be remembered in whatever thing one may undertake. In fact, we go a little further and try to push out the Government official, from many of the things that are being done like the Panchayat which just do not want the Government official to try to boss it, like the village co-operative. We don't want the Government official even though he may be competent to come and boss it. Because we want to develop the feeling of doing things for themselves, self-reliance—they may make mistakes and all that—but they grow in the process. Of course, the Government official or the expert is there to advise them and to help them but not to boss over them as normally he tends to do. In fact as normally anybody who knows the job wants to do it himself quickly instead of allowing others to argue about it, not to do anything. Nevertheless we have come to this definite conclusion that the Government officials should be kept at arms length, wherever possible and should only be allowed to advise, to help and we are prepared to take the risk of the Panchayat or the co-operative going wrong occasionally. We will try to set it right afterwards, than for it never to know how to go wrong or right. Because we want to develop this spirit of self-reliance and co-operation. I know very well that people in villages or for the matter of that people in very high circles, have a tendency to quarrel amongst themselves. That is unfortunate. Nevertheless, they can only get over it by trial and error.

So I welcome this, this institution, this new institute that is being started. And it is, if I may say so, with all deference, exactly the kind of thing which vaguely I had thought of, without knowing that people who know much more about this were actually going to do it. And so I welcome it all the more and wish it success.

(Extempore speech recorded by All India Radio)

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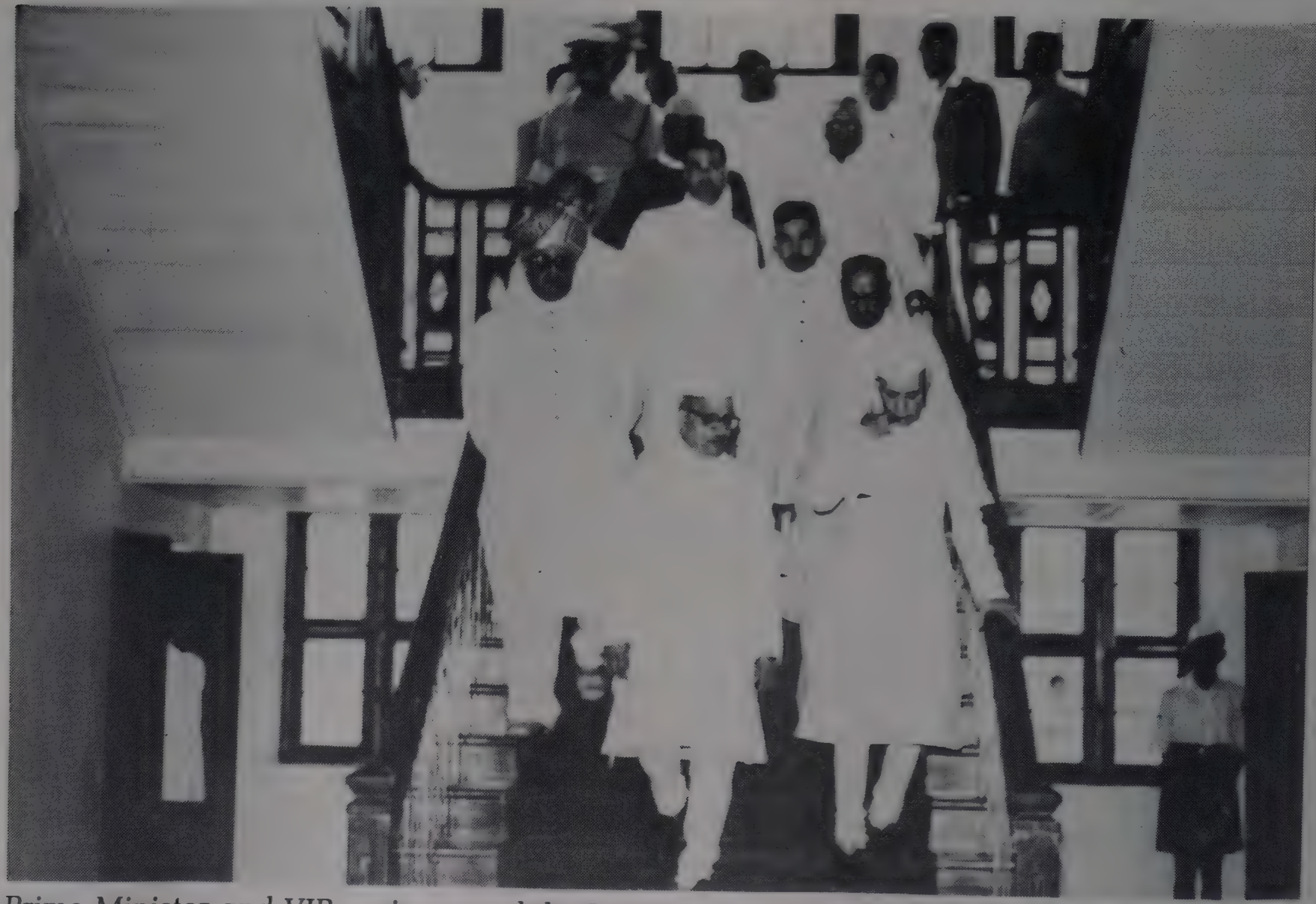
Pandit Jawaharlal Nehru inaugurates — 16th September 1960



Prime Minister and VIPs going round the Institute.

GENESIS

An important landmark in the fight against tuberculosis in India was the launching of a Mass BCG Campaign soon after independence. This turned out to be one of the biggest public health campaigns which penetrated into the vast interior rural areas with a health education component. An important off-shoot of this campaign, which was assisted first by the International Tuberculosis Campaign and later on by the World Health Organization and United Nations International Children's Emergency Fund, was the pooling together of experiences resulting from international co-operation. One such meeting of the minds was between the Late Dr. P. V. Benjamin, the doyen of anti-tuberculosis movement in the country and the then Tuberculosis Adviser to Government of India and Dr. H. T. Mahler, of World Health Organization—a team work which was to have lasting consequences later on.

The results of tuberculin tests carried out as a part of the Mass BCG Campaign revealed for the first time that infection by tubercle bacilli was wide spread in rural areas. This led to the launching of a "Sample Survey on Tuberculosis in India" under the auspices of the Indian Council of Medical Research—a pioneering work which was also one of the biggest surveys of its kind. The report of this survey which aptly started with the caption तमसो मा ज्योतिर्गमय (from darkness lead us to light)" was rather startling and demolished the then prevalent hypothesis that tuberculosis was mainly an urban problem. Since nearly eighty percent of India's

FOR EVERY TUBERCULOSIS CASE IN URBAN AREAS THERE ARE FOUR IN RURAL AREAS.

THE PROBLEM

How to diagnose and treat millions of such cases spread out in about 560,000 villages and more than 3000 towns and cities over an area of 3.3 million sq. kms.

population lived in about 5,60,000 villages spread out over 3.3 million sq. kms., all of a sudden the tuberculosis problem loomed large as a colossus.

After the initial shock was over, tuberculosis workers in India under the guidance of the Benjamin—Mahler Team, started planning to grapple with the colossus with determination and farsightedness.

How to diagnose and treat millions of persons suffering from tuberculosis, spread throughout the length and breadth of the whole country was the challenge to be met. The so-called National Tuberculosis Programme of that time which focussed on providing treatment to tuberculosis patients for long periods in hospitals and sanatoria and their rehabilitation became clearly out of context and had to be replaced by one with a potential to diagnose and treat millions of patients on domiciliary basis. Fortunately, with the advent of powerful anti-tuberculosis drugs, the possibility of treating tuberculosis patients at home could be thought of.

The strategy evolved by the team was broadly two-fold. One was to carry out studies on comparative efficacy of treatment at home and in sanatoria or hospitals and to experiment with and evolve suitable drug combinations for further trial and adoption in a national programme. The other was (1) to evolve a National Tuberculosis Programme which suits the revised perception of the tuberculosis situation in the country and which is nationally applicable, (2) to train a large number of tuberculosis workers required to man the programme and (3) to carry out research to help attain these twin objectives. The National Tuberculosis Institute (NTI) was set up to tackle all the three latter responsibilities. This Institute was formally inaugurated on 16th September 1960 by late Pandit Jawaharlal Nehru, the first Prime Minister of India. In his inaugural address, the late Pandit Nehru remarked that when he heard about the real purpose of the establishment of the Institute, it struck him as something unique, something far more important than providing some institutions or hospitals for only treating patients.

2. OBJECTIVES, FUNCTIONS & THE STRUCTURE

OBJECTIVES

Following detailed discussions at the early stages, the broad aims for which National Tuberculosis Institute (NTI) was set up were re-formulated into more precise objectives:

- To formulate and evolve a practicable, economically feasible and widely acceptable tuberculosis programme for the entire country,
- To train medical and para-medical workers to efficiently implement the programme in rural and urban areas, and
- To undertake necessary research to give substance and support to the above two aims.

With the implementation of the National Tuberculosis Programme (NTP) in a large number of districts, the function of monitoring the programme has also been entrusted to NTI.

FUNCTIONS

To fulfil the objectives, NTI has to carry out epidemiological, sociological, operational and laboratory research and assimilate the findings from such research in an integrated manner. Most of these research activities have to be carried out in the field with relatively greater emphasis on rural areas. These were essential for formulating the

National Tuberculosis Programme (NTP) and evolving it further on the basis of experience gained in its implementation and to suit changes in the situation. Results of such continuing research activities have to be sorted out and adapted for inclusion in the material for a dynamic training programme. Evaluation of training itself was another important field for research.

The main training function of NTI is job oriented in-service training of medical and para-medical officials at the district level so that they can in turn train medical and para-medical staff at primary health centres and grass-root levels as well as implement and manage district tuberculosis programmes. In addition, group educational activities such as seminars, work-shops, etc., have to be organised in which senior officers of Directorates of Health Services of States and Union Territories, Chief Medical Officers of the districts, teachers of tuberculosis and preventive and social medicine in medical colleges etc., are briefed about the concept, functioning, supervision and monitoring of the National Tuberculosis Programme. These could provide an important and useful forum for interaction between persons in senior technical and administrative positions and for making use of such high level expertise in the promotion and evolution of the programme.

Monitoring and evaluation of the programme and rendering technical assistance to the Directorate General of Health Services are other important functions of NTI.

THE STRUCTURE

The functions to be carried out determine the structure of the Institute. To carry out all the functions mentioned above, personnel with expertise in different disciplines and specialities are needed. To assimilate and integrate the findings from field research and to undertake necessary further research in a meaningful manner these personnel have to work together with full understanding of and commitment to the common aims. For administrative and operational convenience special sections were formed in NTI. To ensure adequate exchange of information and inter-disciplinary discussions a Technical Co-ordination Committee (now named, Operations Research Forum) has to meet frequently. This forum helps each section to know what other sections are doing and also benefits from the wider experience of all sections in planning, co-ordinating and carrying out research studies.

The sections of the Institute which have been formed and their primary responsibilities are as follows:

EPIDEMIOLOGICAL SECTION: To carry out epidemiological studies which will throw light on the epidemiology of tuberculosis in the country and help in the evolution and evaluation of the National Tuberculosis Programme.

SOCIOLOGICAL SECTION: To study the behaviour of sick persons, particularly tuberculosis patients, to help in evolving acceptable methods for the diagnosis of tuberculosis patients and their satisfactory treatment.

CONTROL SECTION: To conduct operational studies to formulate and evolve a nationally applicable tuberculosis programme after synthesising the results of epidemiological and sociological studies, clinical trials on treatment for tuberculosis etc., to co-ordinate the training activities and to cater to the health education aspects of the programme. The operational studies mainly cover case-finding, selection of acceptable drug regimens, modalities of management of tuberculosis patients

A Meeting of the Operations Research Forum.

under domiciliary treatment and prevention of tuberculosis.

BACTERIOLOGICAL SECTION: To assist other sections of the Institute by conducting laboratory investigations on bacteriological specimens collected in different studies and to carry out laboratory studies to throw light on various bacteriological aspects brought out by different studies of the Institute.

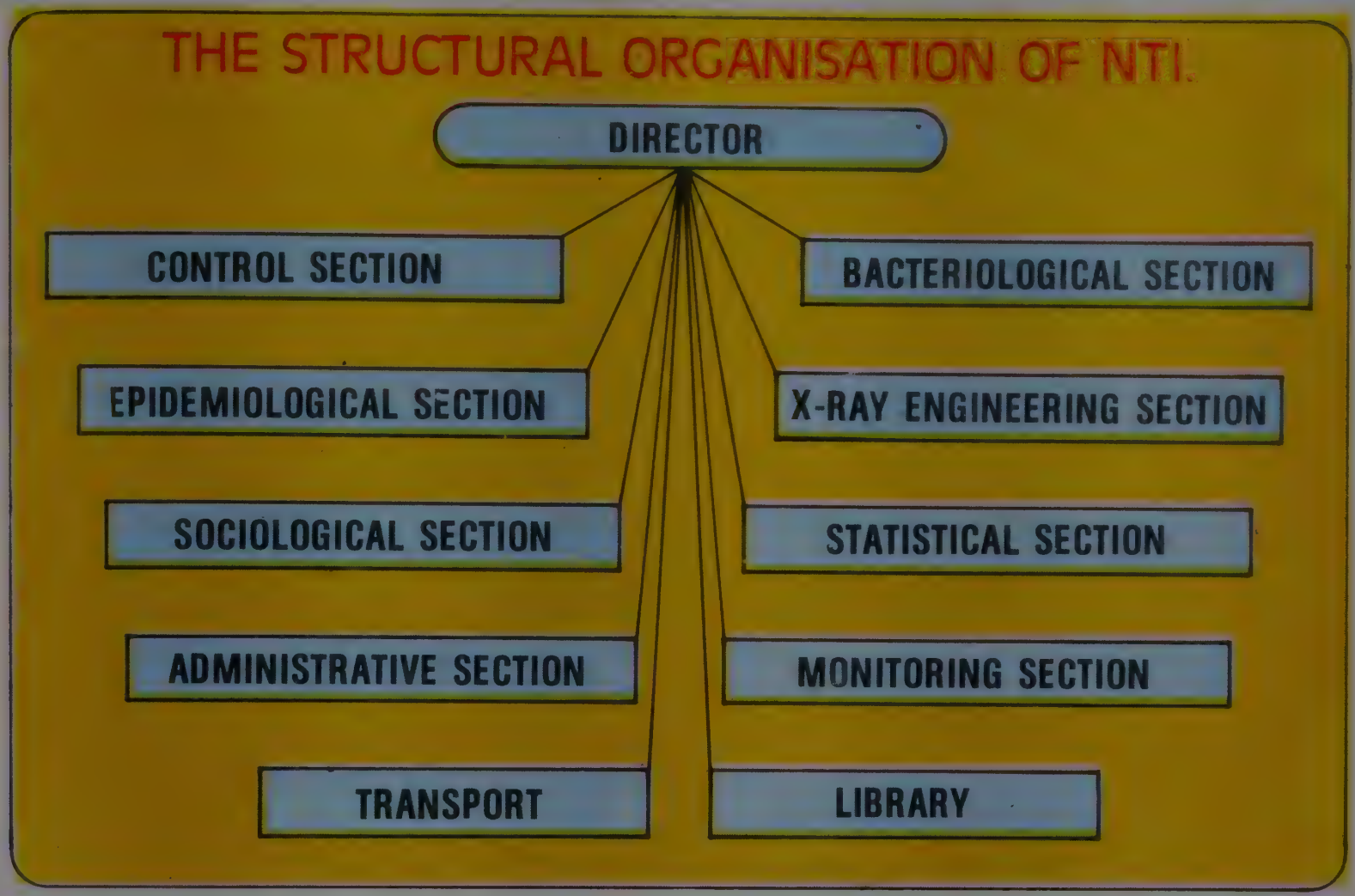
X-RAY SECTION: To advise and assist in the selection, repair and maintenance of X-ray equipment for the National Tuberculosis Programme and to conduct X-ray examinations for studies conducted by different sections of the Institute.

STATISTICAL SECTION: To advise and assist in designing of studies, to scrutinise and analyse the data collected by various sections of the Institute and to assist in preparation of reports from all studies.

MONITORING SECTION: To guide the District Tuberculosis Programme (DTPs)—the functioning units of National Tuberculosis Programme in the country—about preparation of reports, to compile and analyse the data from different District Tuberculosis Programmes and to send the analysed information to Director General of Health Services and to the Directors of Health Services in the States.

Since the programme at the district level is manned by a multi-disciplinary team, their training at NTI in different specialities and inter-disciplinary linkages necessary for effective team work is carried out by all these sections.

In addition to the technical sections mentioned above there are administration and transport sections and a library. The former takes care of all establishment matters. The transport section maintains a fleet of vehicles and provides transport required for carrying out field studies, for field trips under the training programme and for other official purposes. The Library as an "Information Centre on Tuberculosis" procures, processes, provides and disseminates the information generated at the local, regional, national and international



levels through documentation and mailing services.

While the formation of sections is similar to that in other institutions, strong interlinkages have been built up since the inception of the Institute and the entire staff work as a well-knit team. This is a unique feature of the NTI structure.

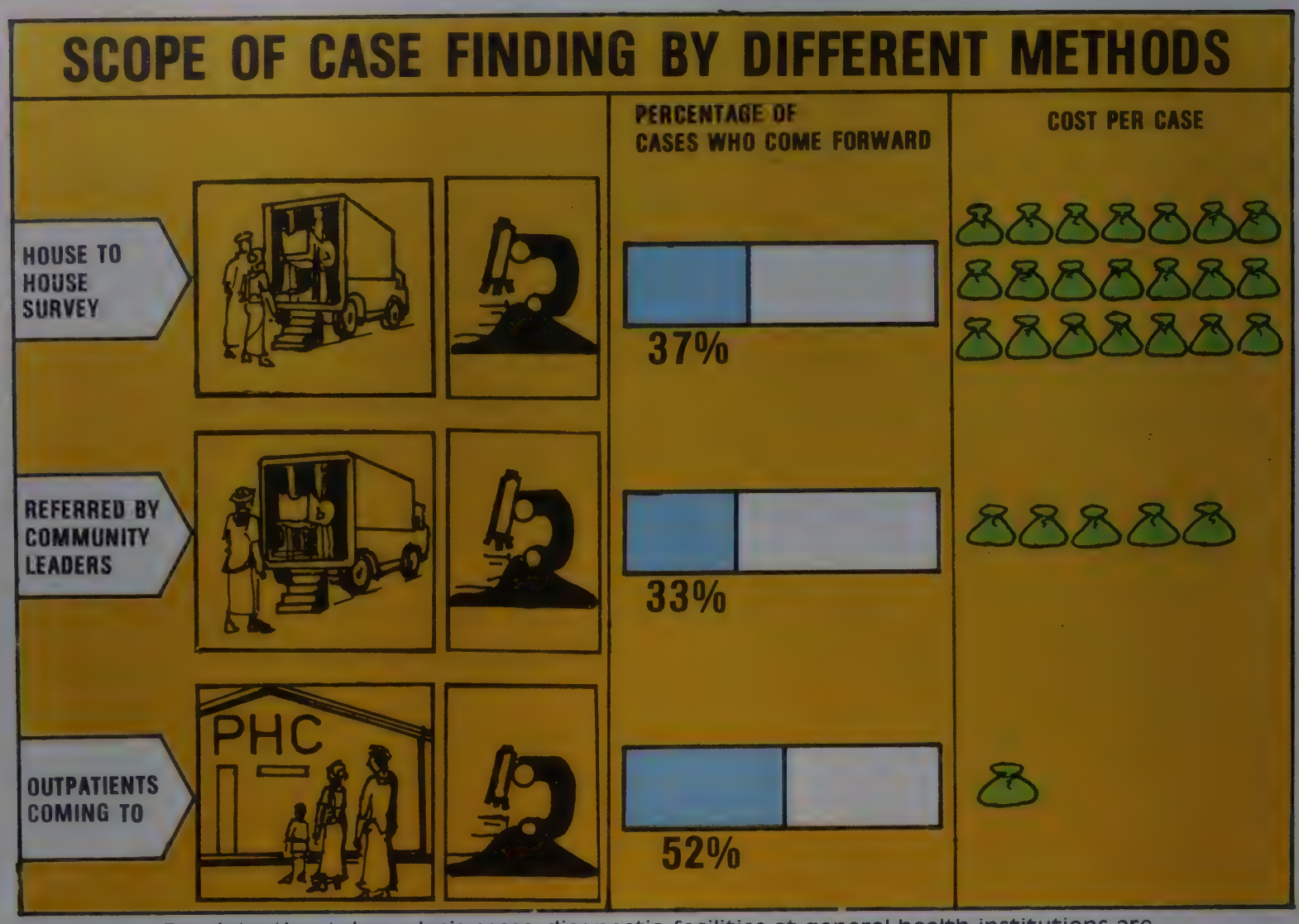
3. A SERIES OF BREAKTHROUGH

Born out of a breakthrough. of the conventional idea that tuberculosis was mainly confined to urban areas, NTI was perhaps aptly conditioned to make a series of further breakthrough of conventional approaches and practices.

APPROACH TO THE PROBLEM

One of the first conventional approaches which suffered a set back was the purely technical (epidemiological-cum-clinical) approach. NTI spearheaded and proved that sociological and operational approaches are equally or even more relevant for tackling the suffering caused by tuberculosis with the optimum use of the scarce resources. For instance, mass case-finding using mobile X-ray units—then quite popular in the advanced countries—was proved by well designed operational studies to be costly and not so useful because only a small proportion of tuberculosis cases in the community could be diagnosed in this manner due to various reasons.

On the other hand, sociological studies showed that vast majority of tuberculosis patients were aware of symptoms suggestive of tuberculosis and more than half of them were already seeking relief at existing general health institutions which did not then have facilities for diagnosis of tuberculosis and hence were turning most of them away with only symptomatic treatment.



For detecting tuberculosis cases, diagnostic facilities at general health institutions are more rewarding than mobile units and much less expensive.

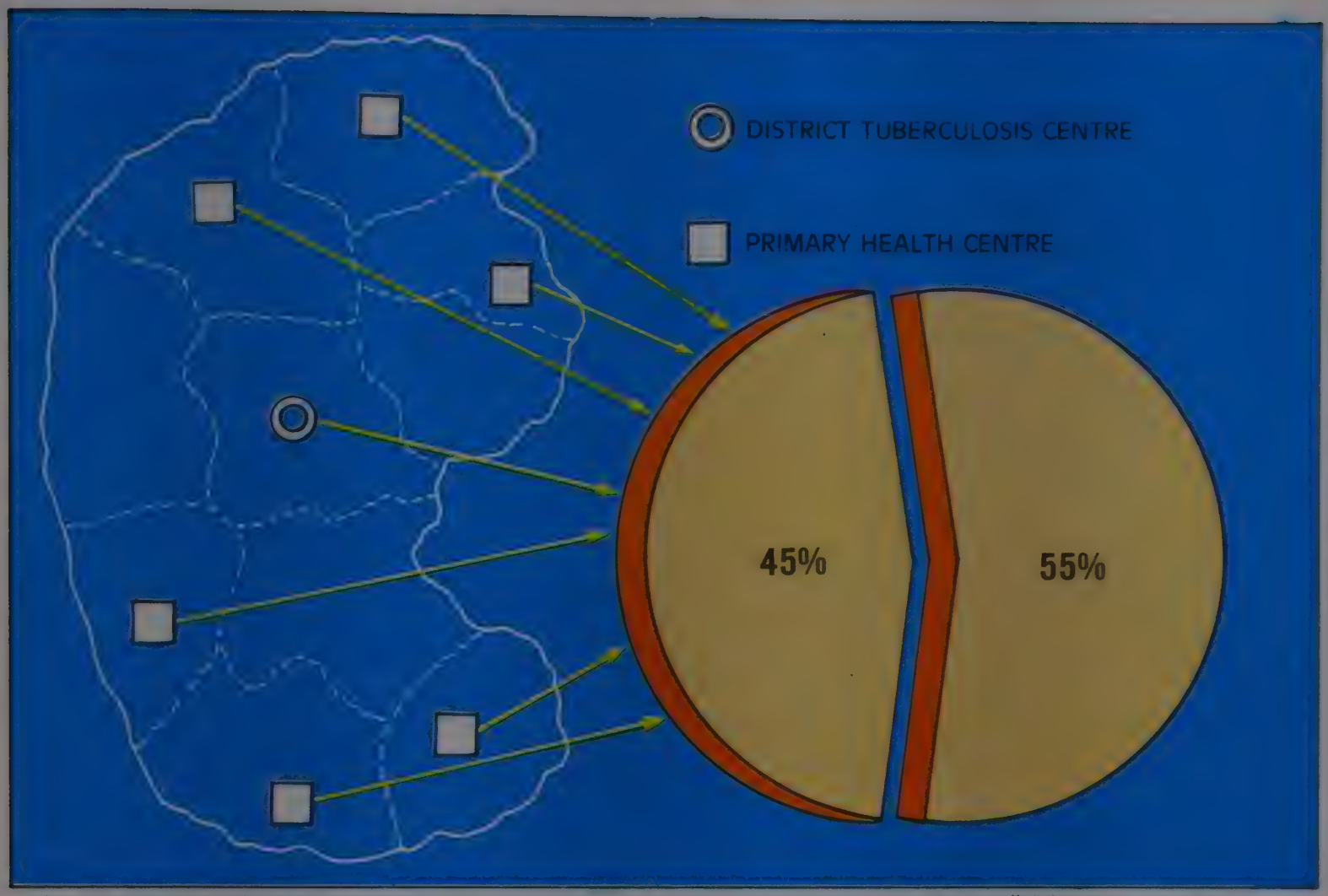
POTENTIAL OF A DISTRICT TUBERCULOSIS PROGRAMME

Further operational studies showed that providing microscopes, chemicals and stains, drugs etc., at primary health centres and other peripheral health institutions and training the existing medical and para-medical staff in diagnosis and treatment of tuberculosis is a practicable method of meeting the felt needs of the tuberculosis patients seeking relief at these institutions. Such studies also helped to estimate the work load involved and to establish the potential of this strategy to diagnose tuberculosis cases in adequate numbers and put them on treatment, which could ultimately lead to the cherished goal of control of tuberculosis in the country.

INTEGRATION WITH GENERAL HEALTH SERVICES

For all major health problems such as malaria, T B leprosy and family planning the practice then was to have vertical programmes with separate staff upto grass root level. The National Tuberculosis Programme formulated by NTI is the first major national health programme which has from the very beginning been conceived of as a health programme integrated with the general health services and functioning as a part and parcel of them.

It is also significant that this programme has been formulated keeping not only the relevant administrative and financial considerations in view but also on the basis of systematically planned epidemiological, sociological and operational studies. The programme so formulated has received wide international recognition and many developing countries of the world have adopted the methodology and have sent their personnel for training at NTI.



About 45 percent of existing infectious cases in a district can be diagnosed in a year by a district tuberculosis programme. This is about half the number of new cases which occur each year in the district.

A TWO-WAY REFERRAL SYSTEM

The model health system envisaged for the country consists of institutions for primary health care at the periphery and provision of specialised care at different tiers at district and state levels. Those needing detailed investigations and specialised treatment are to be referred by the primary health care centres to the centres with specialised staff and services. Patients so referred to specialised services are referred back to peripheral health institutions for continuation of health care if need be. Such a referral system, however, has not been systematically evolved in the country as yet. The National Tuberculosis Programme provides for a systematic referral of patients using a referral slip which is also used for communicating the results of specialised examinations back to the periphery i.e., a two-way referral system using records.

LIMITATIONS OF DIAGNOSIS BY X-RAY

X-ray examination was long considered to be the best diagnostic tool for tuberculosis because of the belief that it diagnosed patients in the early stages of disease. NTI studies not only confirmed the wide differences in interpretation of chest X-rays even by experts, observed in studies abroad, but also showed that the considerable over-diagnosis from this method may label many persons not actually suffering from tuberculosis as cases of tuberculosis and unnecessarily make them take drugs for long periods.

On the other hand, sputum examination was shown to be the surest and cheapest way of diagnosing tuberculosis and chest X-ray examination was relegated to play rather a secondary role of identifying the 'suspect' cases and offer treatment to them only after proper investigations and after excluding non-tuberculous diseases of the lungs.

Different health workers approaching a rural family for their own programmes while the family is worried about their sick child.

Under an integrated health programme, muiti purpose Male and Female health workers provide service for all relevant health problems in a family.

1. Patient giving sputum at PHC.

2. Patient's Sputum is negative.
Advised X-Ray at DTC

3. Patient leaving PHC with referral slip.

4. Patient X-rayed at DTC.

5. Referral slip with result
posted to PHC.

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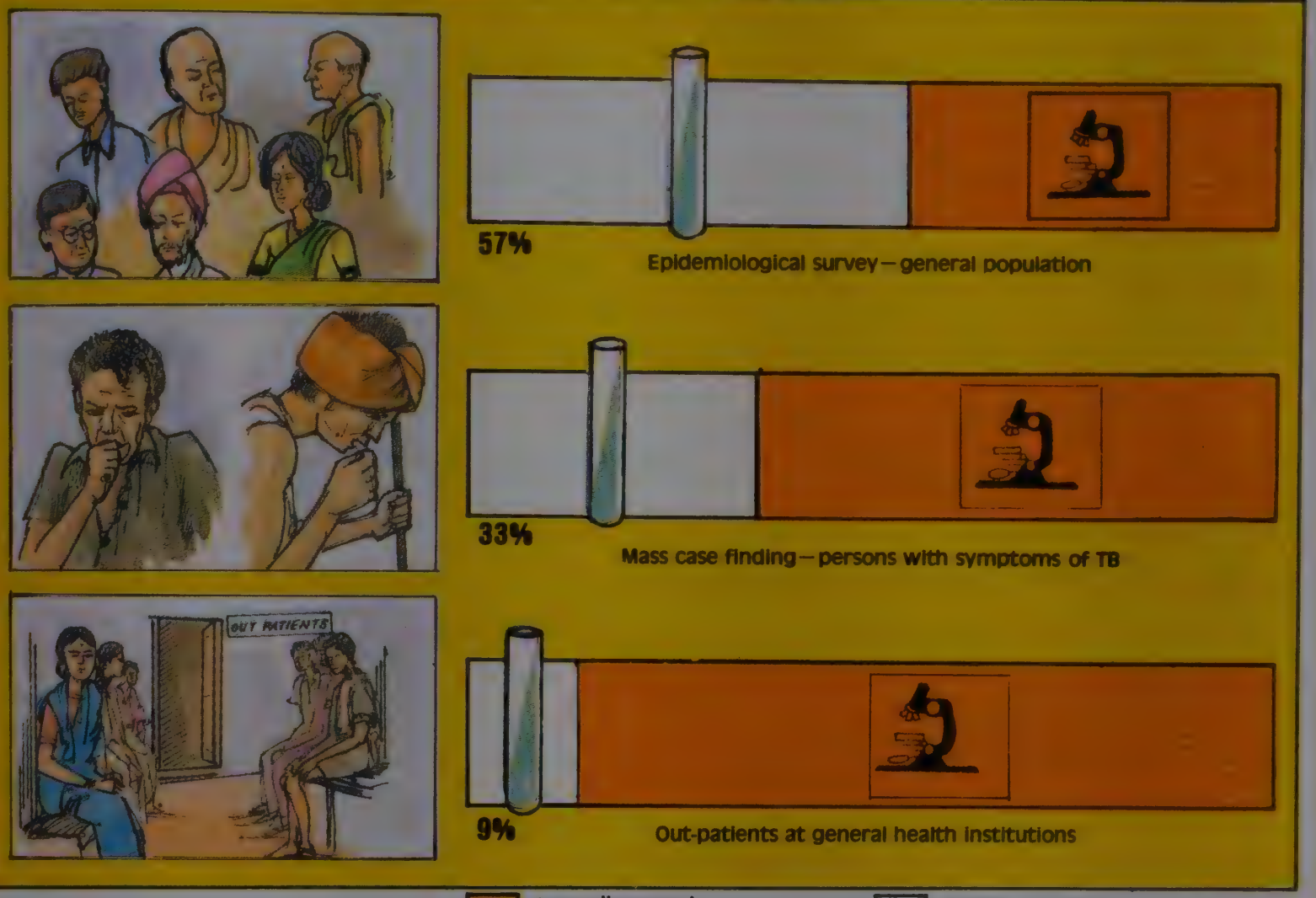
Even experienced X-ray readers miss some true TB cases and diagnose some healthy persons as TB cases—two serious limitations of diagnosis From X-ray pictures.

ROLE OF CULTURE EXAMINATION

The experience of advanced countries had shown that growing of cultures of tubercle bacilli from sputum specimens could detect many tuberculosis cases which were missed by examination of sputum smears. Hence, this method of diagnosis was considered to be essential although it was costly and required a special type of laboratory. NTI studies showed that the proportion of such cases diagnosed only on culture out of total diagnosed was not the same in all situations. This was highest when sputum was collected from persons with abnormality in the X-ray films taken in community surveys and lowest (less than 10 percent) when sputum was collected from out-patients complaining of cough at general health institutions.

ADDITIONAL CASES FROM CULTURE EXAMINATION IN DIFFERENT SITUATIONS.

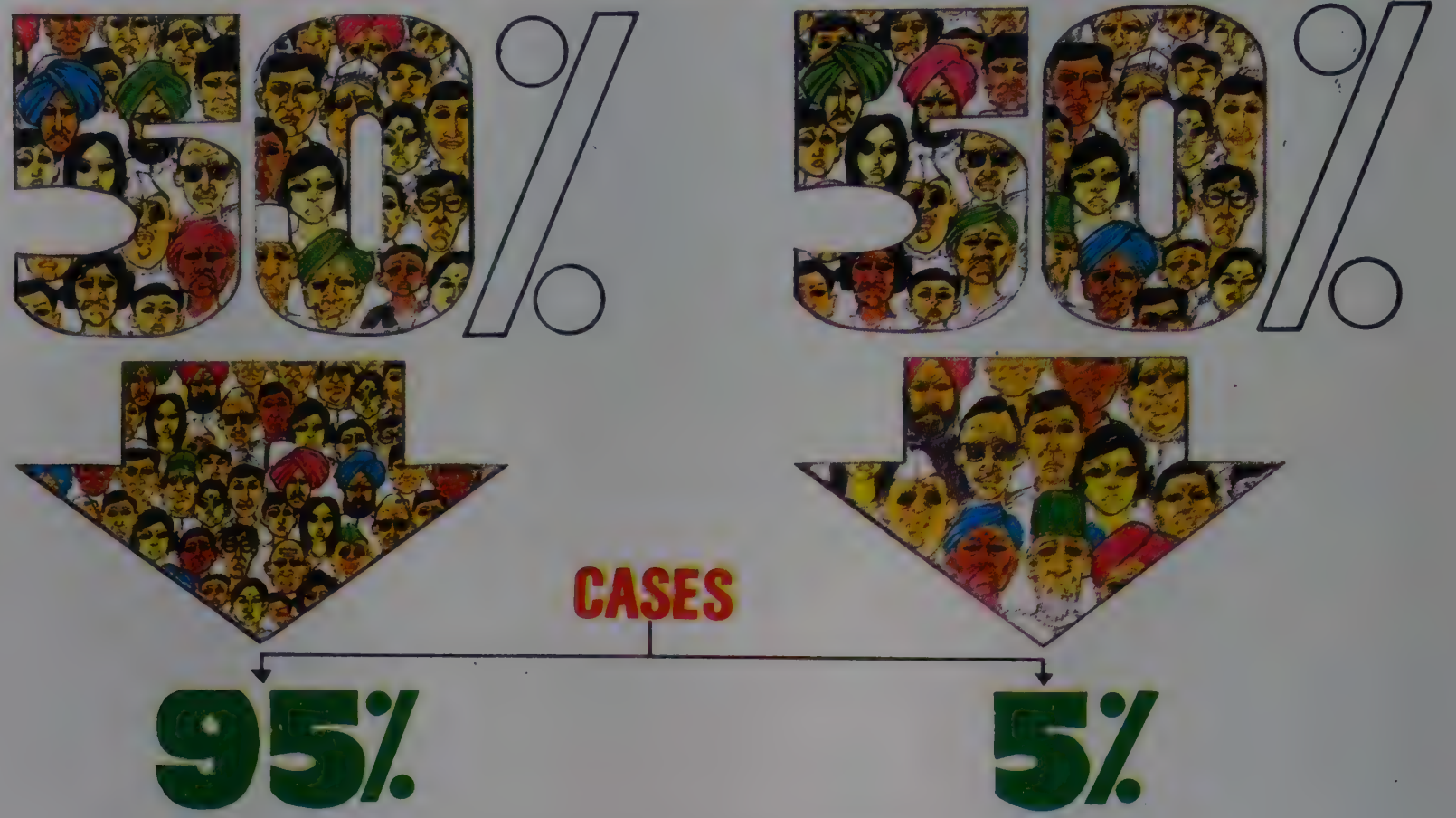


Sputum culture is more rewarding than microscopy. But in the programme situation the advantage is marginal only and is not commensurate with the much higher cost.

Hence, under programme conditions, the proportion of cases detected only on culture is so small that the setting up of a chain of laboratories for sputum culture throughout the country is not cost-effective and as such not advocated. This has resulted in substantial saving of scarce resources in money, men and materials.

PLACE OF CONTACT EXAMINATION IN THE PROGRAMME

Since tuberculosis is an infectious disease, it was thought that examination of all household contacts would help to find more tuberculosis cases. Epidemiological studies conducted by NTI showed that most of the tuberculosis cases occurred singly in households and there are very few households which have more than one case at any point of time. Thus, routine examination of all household contacts soon after diagnosis of a case is not very rewarding. Analysis of data from some well established tuberculosis centres in the country showed that only a small percentage of the total patients diagnosed by them were obtained from examination of household contacts even when about half of their resources were spent on examination of household contacts. As such, it was suggested that only those household contacts who suffer from chronic chest symptoms need be investigated.



Even when equal resources were spent on examination of out-patients and household contacts of known TB cases, the latter had contributed only a small proportion of the cases diagnosed.

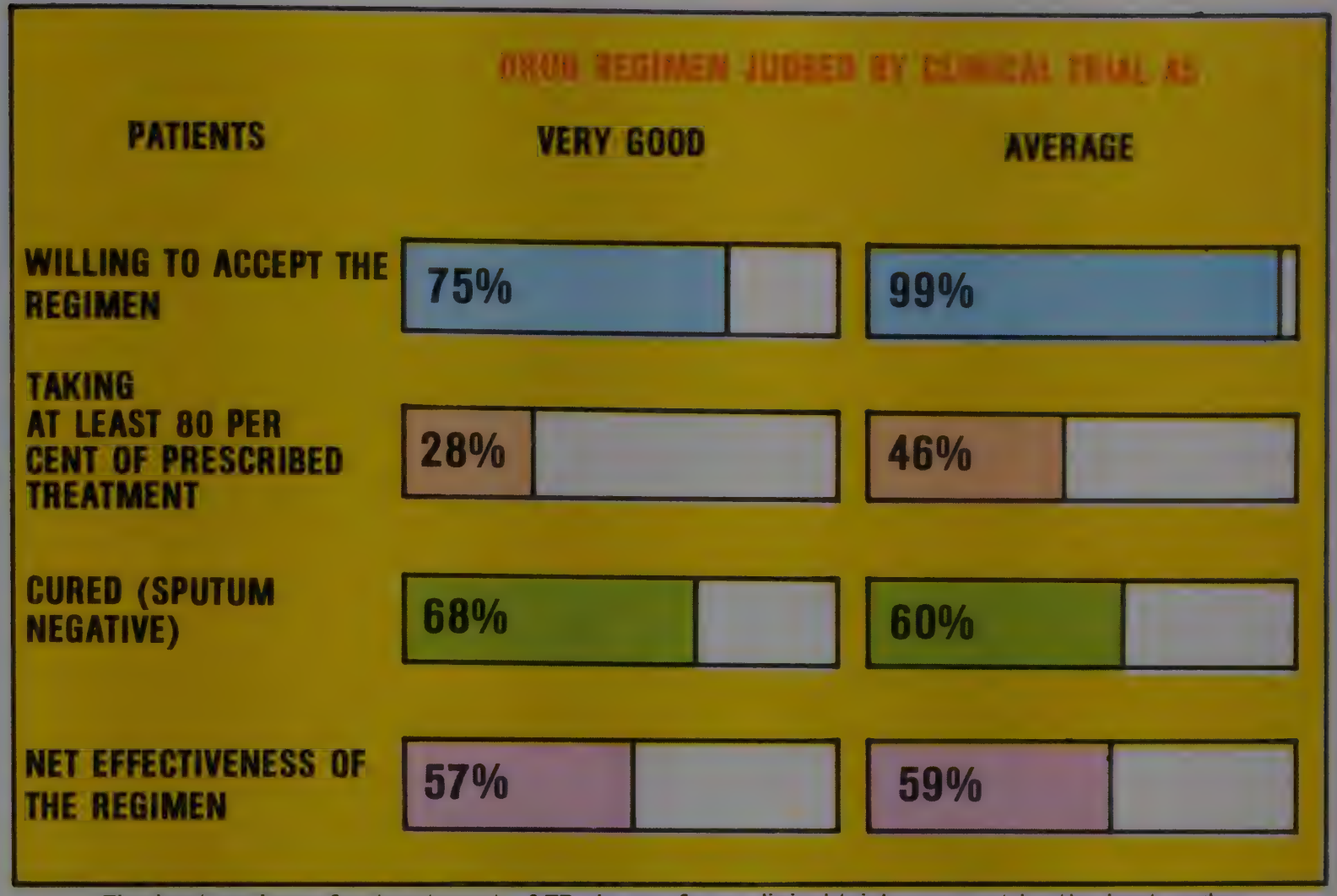
LIMITATIONS OF CLINICAL TRIALS

Tuberculosis patients have to undergo regular treatment for long periods. But all over the world it was observed that all the patients do not complete the prescribed period of treatment. In order to make the treatment more acceptable and more effective, different drug combinations over varying periods of treatment have been tried out in clinical trials. NTI studies have shown that the best drug regimens selected from such clinical trials need not be the best under field conditions.

While choice of more potent drug combinations and reduction in the period of treatment are, no doubt, important, NTI studies focus attention on the fact that ensuring regularity of the prescribed treatment is of crucial importance and deserves to be given much more attention than the choice of drugs. The utility of motivating family members in addition to the patient, has been demonstrated.

REPEAT SURVEYS IN RURAL AREAS

Most of the advanced countries maintain fairly reliable and complete statistics regarding tuberculosis cases and deaths due to TB. These provide useful information regarding number of TB cases, fresh cases which occur each year and the number of deaths due to TB. Developing countries do not have such reliable statistics on TB and hence do not have the above information. To overcome these problems and to provide further insight into the epidemiology of tuberculosis and its time trend, NTI has been carrying out a longitudinal survey in which the same population from 133 villages (initial population over 77,000) has been repeatedly examined at



The best regimen for treatment of TB chosen from clinical trials may not be the best under field conditions. This is illustrated by the above findings from an operational trial.

intervals since 1961. This unique large scale survey has provided valuable information on number and proportion of prevailing TB cases, rate of occurrence of fresh cases, the relationship between the two, the natural dynamics of TB in the community without any active intervention, excess mortality due to TB and many other important aspects of tuberculosis in rural areas. NTI has also developed a new method of estimating the rate at which persons in the community get infected by tubercle bacilli (not necessarily leading to disease), which overcomes some of the limitations of the earlier methods used for this purpose.

VARIATION AMONG TUBERCULOSIS PATIENTS

All tuberculosis cases have been considered to be similar. The longitudinal survey, mentioned above, has shown that about one-third of the tuberculosis cases in the community got cured without any treatment. Studies under programme conditions showed that in about 60-70 percent of the patients the disease got arrested even though only about one-third of them completed the prescribed period of treatment.

SPEEDING UP OF BCG VACCINATION

BCG vaccination was generally administered only to those who did not react to a tuberculin test. This meant two visits to each person and hence slowed down the work. Moreover absentees at the second visit could not get the benefit. NTI studies showed that BCG vaccine could be administered to all without the tuberculin test. This resulted in substantial gains to the country because of doubling the speed of work and other benefits. Another study showed that BCG vaccination which was hitherto given by

specially trained unipurpose teams could be administered by multi purpose health workers after a brief training. This bas resulted in the integration of BCG vaccination with the Expanded Programme of Immunizations under which a complete package of immunizations is given to children at the appropriate age.

TAKING AND DEVELOPING X-RAY PICTURES

Loading and unloading of X-ray films into and from the camera and processing of exposed films are all usually done in a dark room. Construction of such a dark room is expensive and not cost effective when the work load is only one or two film rolls a day. To overcome this situation, NTI developed a "Daylight Developing Box". Complete film handling from loading of fresh films to processing and drying can be done in this box which can be kept even in a fully lit room. This unit is being used for many years in NTI to train the X-ray technicians of the district teams.

TEAM TRAINING AND CONTINUING EDUCATION

The implementation of any programme involves both medical and para-medical personnel. Generally each category is trained separately. NTI is probably the only institution in the country which trains a district team of medical and para-medical personnel together for implementing and supervising the tuberculosis programme and emphasises on the interlinkages between them.

A day light developing box being used.

Continuing education is another aspect which NTI has taken up. In order that the ex-trainees and seminar participants are kept informed about the latest development in NTP and research findings NTI is bringing out a Newsletter. This Newsletter has also published articles from enthusiastic tuberculosis workers and health personnel and thereby helped them to share their experiences with others.

1. X-ray technician trainee explaining his functions to other members of the team

2. Laboratory technician trainees demonstrating sputum smear preparation to treatment organiser trainees.

3. Treatment organiser trainee training the laboratory technician trainee in maintaining treatment cards.

4. Statistical assistant trainee explaining the preparation of monthly report to district Taberculosis officer trainee.

1. Trainees arriving at a PHC with NTI staff for training in supervision.

2. District Tuberculosis Officer (trainee) discussing DTP problems at PHC.

3. Treatment Organiser (trainee) supervising the pharmacist at PHC.

4. A Laboratory Technician (trainee) supervising the microscopist at PHC.

5. District Tuberculosis Officer (trainee) giving training to multi-purpose health workers.

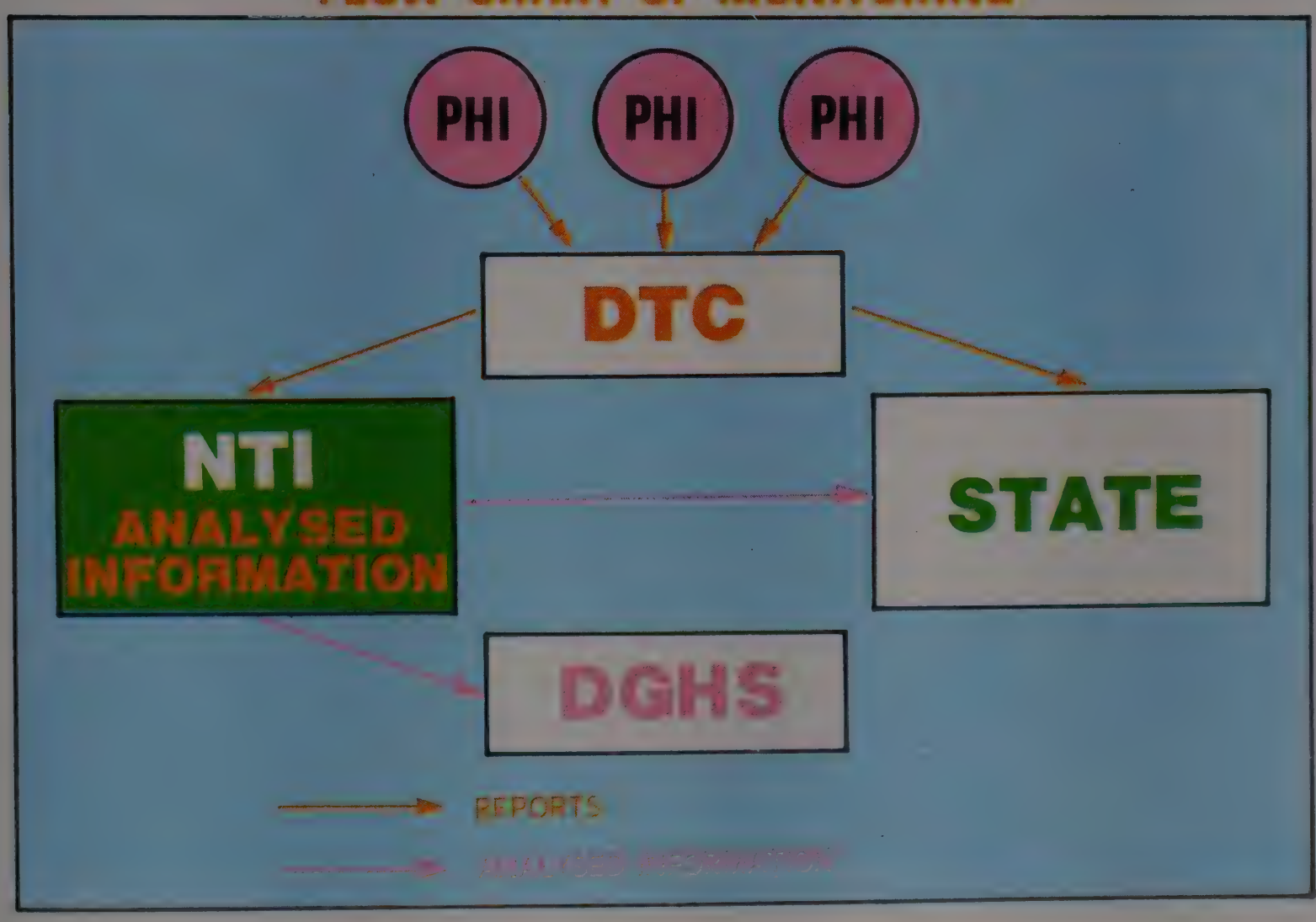
A NEW METHODOLOGY OF SUPERVISION

The routine practice under the health system was that officers at higher levels inspected the work of their subordinates. The emphasis in actual practice was mainly on finding faults and instilling a sense of fear. NTI advocated for a change of attitude and approach and the introduction of regular and systematic supervision which provides for technical guidance and administrative and logistic support to the staff to solve the problems which they face. For many years, this improved methodology of supervision is part of the training curriculum of NTI.

MONITORING OF NTP

In consonance with the federal set up, the flow of information from different health programmes has been routed in a heirarchical fashion resulting in considerable delay in compilation at the national level and its use for monitoring. NTP, however, is being monitored for many years by direct flow of information from the districts to NTI. The districts in turn got a feed back of the analysed information from NTI through the States.

FLOW CHART OF MONITORING



A district officer pointing out to the PHC doctor his faults in the presence of the latter's subordinates during inspection.

1 Doctor of supervisory team discussing problems with PHC doctor

2. Treatment organiser of supervisory team enquiring about stock of drugs at PHC and giving replenishments.

3. Laboratory Technician of supervisory team giving re-training to microscopist at PHC.

4. Supervisory team discussing their observations and ways of improvement with PHC doctor.

4. MAJOR PROBLEMS & FUTURE STRATEGY

Monitoring and evaluation of NTP indicates that there is considerable scope for its improvement. It is not yet functioning to the level of initial expectations at the time of its formulation. One reason may be that the general health services with which the NTP is integrated has itself not been able to develop and get strengthened to the desired level. Another problem relates to the acceptance of tuberculosis services as a part of their responsibilities by the concerned staff of the general health services. Thirdly, the clinical approach of the medical profession at various levels including teachers of medical colleges and staff in primary health centres and other peripheral health institutions often limit the number of persons for whom essential diagnostic examinations are carried out. Quantity and quality of sputum examinations carried out at the primary health centres and other peripheral health institutions have also suffered. This may be mainly due to non-availability of some of the essential staff at a number of such institutions and excessive work with the existing staff because of resurgence of Malaria in some areas. In addition, lacunae in training and supervision by the appropriate level has also played a role. Even those medical and para-medical staff trained at NTI in team work for organisation of the programme often tend to slide back to their earlier practices in work because of lack of support at various levels. In spite of all these limiting factors there is hardly any doubt that the NTP has been able to make considerable headway. Against about 500 to 600 new TB cases which used to be detected annually in an average district some two decades back when the concept of NTP integrated with general health services was evolved, nearly 2,500 to 3,000 new TB cases are being detected in an average district every year and put under treatment. With the proposed expansion of primary health care facilities, proposal for establishment of one primary health centre for about 30,000 population instead of 100,000 at present, more number of sub centres, proposed establishment of a community health centre provided with specialised staff and equipment and introduction of the scheme of village health guides and multi purpose health workers, there is every hope that the activities under NTP would also be considerably boosted both quantitatively and qualitatively in the ensuing years.

The two way referral and feed back system which is a part of NTP needs to be strengthened further. Such a system has not yet been practised in the general health services and its acceptance is low. In short, most of the problems relate to the general health services itself with which NTP is integrated. Any effective improvements in NTP would also require indepth studies on various aspects of the general health services. Thus, simultaneous with the further growth of the primary health care facilities, NTI has also to carry out more studies in a big way, if NTP has to be made more efficient and effective. This will also be of considerable benefit to the general health services which have to be fully geared to reach the goal of 'Health for All by 2000 A.D.'

NTI studies have clearly shown that all tuberculosis patients are not alike. Thus, a uniform approach under the programme will not be the most effective. Studies covering a wide range of aspects have to be carried out by NTI to evolve a more flexible and meaningful programme. Experts in various disciplines (including immunology and bio-chemistry) have to discuss and work together to achieve this aim.

Under the NTP the mode of integration of tuberculosis services with primary

health care ensures that almost all public health concepts have been adequately taken into account. One important concept which needs more attention is participation and involvement of the community. Many more operational studies by NTI are required to fill this gap.

NTP mainly focusses on finding and treating existing tuberculosis cases. This will no doubt bring down the number of persons who will get newly infected by tubercle bacilli in the course of years, though the process will be a slow one. However, most of the new tuberculosis cases will be arising from already infected persons and hence NTP may not be able to influence the trend of tuberculosis appreciably for some time. With the existing methodology being adopted under the programme NTI would have to go into this aspect in depth and find out the possibility of modification in the approach within the ambit of integral health services.

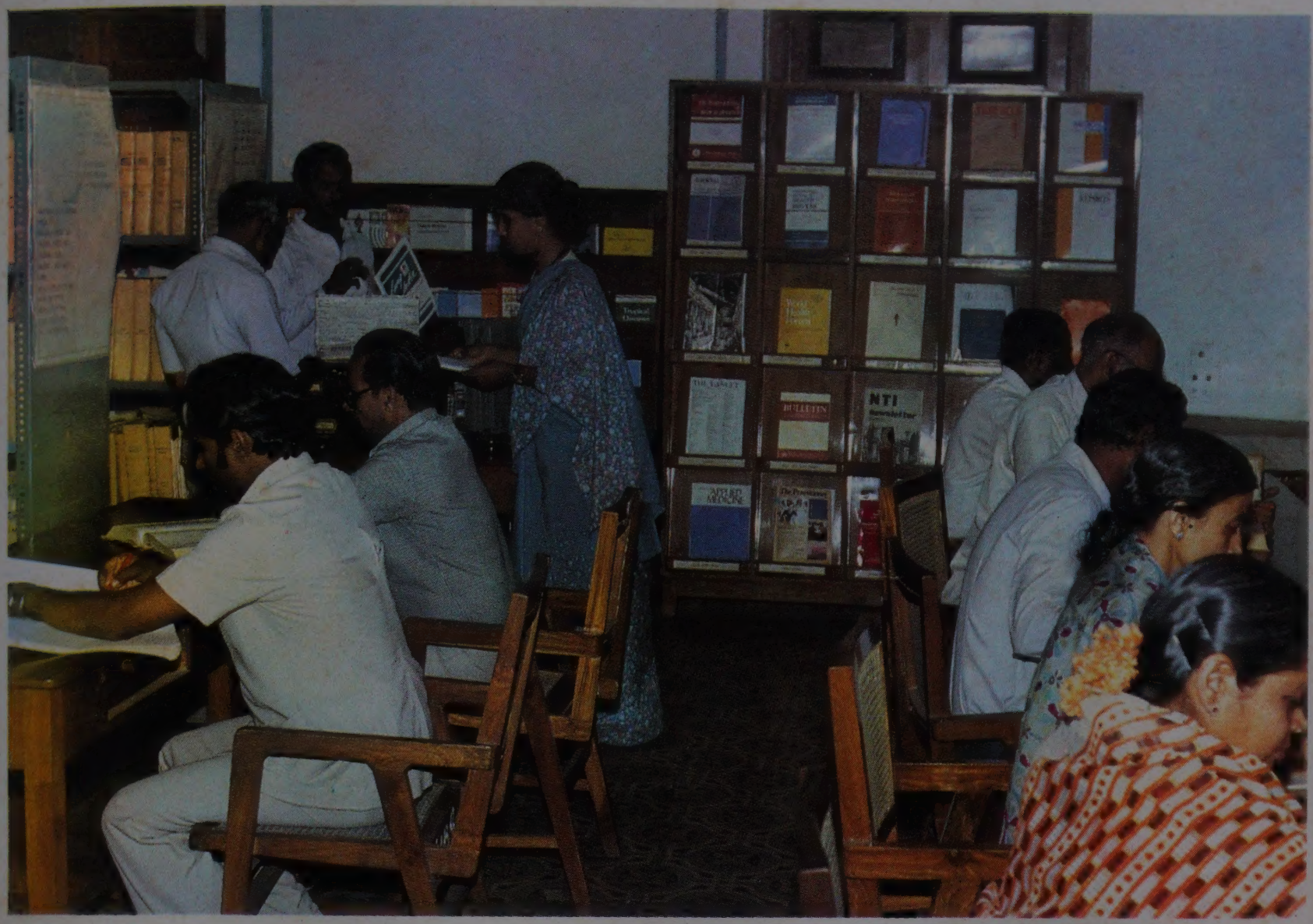
Evaluation of the trend in the community will also become more and more relevant as the programme gains momentum. This is likely to happen with increased investments for control of tuberculosis and their more effective use. Suitable methods of evaluation which are cheaper than the existing ones have also to be evolved through research at NTI.

NTI has been monitoring the performance of NTP at district level and sending regular feedback to all the states. The success of this important activity depends on the reliability of the reports received from different districts. In order to ensure this and to have a check on the quality of different programme activities it would be necessary to have field evaluation in different regions of the country.

5. PERSPECTIVES

NTI has trained large number of medical and para-medical workers from all over the country during the last two and a half decades. Because of heavy turnover of staff mainly due to transfers, promotion, retirement etc., there is still considerable demand for training of teams, which would have to be continued, though in a limited manner. NTI has also to take up re-orientation or refresher training of district teams. Orientation seminars for senior health officials at district and state levels have to be taken up on a wider scale, so as to enlist their active participation in the programme. The long experience gained by NTI in training in an improved methodology of supervision and the reasearch in various aspects of the health care delivery system (i.e., general health services) could also be made use of to train many more categories of staff of the general health services with which NTP is integrated. This will go a long way in improving not only the efficiency of NTP but also of the general health services within which it has to function.

The multi-disciplinary approach, the emphasis on operational investigations to find solutions which are practicable and improved methodology of supervision are areas in which NTI has done pioneering work. Further work on these lines and in monitoring and evaluation of both quantitative and qualitative aspects of the programme will be another giant step forward towards Health for All by 2000 A.D.



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